



TRIAD-HAR

INVENTION | RESEARCH | INNOVATIVE SOLUTIONS

CORPORATE INNOVATION & TECHNOLOGY PROFILE

TECHNOLOGY | COMPUTING | CIVIL AVIATION | SPACE

OUR INVENTIONS AND RESEARCH

Our inventions and research are directed toward innovative solutions across computing, software, mechanical systems, energy, civil aviation, and space. TRIAD-HAR welcomes collaboration through technology partnerships, co-development, licensing, or complete client projects, with every design and product configuration aligned to the applicable contract and client requirements.

COMPANY OVERVIEW

TRIAD-HAR develops an integrated portfolio of innovative capabilities across computing, software, mechanical systems, energy, civil aviation, and space, with emphasis on performance, safety, resilience, and lifecycle responsibility.

OUR APPROACH

INNOVATION

Original research and practical solutions across the company portfolio.

SAFETY & RESPONSIBILITY

Capability development aligned with reliability and responsible use.

CLIENT ALIGNMENT

Solutions matched to the applicable contract and project objective.

PORTFOLIO STRUCTURE

TRIAD-HAR

Company and commercial identity

TRIAD-TD

Technology, invention, and research portfolio

TRIAD-ED DYNAMIC SYSTEMS

Dynamic systems and engineering capabilities

PORTFOLIO DIVISIONS

Computing | Mechanical | Energy | Aviation & Space | Lifecycle

ENGAGEMENT: Contract-led development, client-specific configuration, partnership, licensing, and complete project delivery across technology, civil aviation, and space.



Technology Portfolio & Capabilities

DH COMPUTING SYSTEMS

A scalable computing family comprising **DH Compact**, **DH Professional**, **DH Max**, and **DH Specialized** for business, engineering, scientific, local-AI, and specialized workloads.

DS OPERATING ENVIRONMENT

An integrated lightweight environment for everyday work, files, communications, device management, controlled access, updates, and recovery across personal, professional, and business use.

SIWAR SOFTWARE SUITE

A user-facing suite for communications, productivity, files, engineering work, project coordination, dashboards, and optional AI assistance, configurable to client requirements.

DA MATHEMATICAL COMPUTING

Mathematical-computing capability for numerical, engineering, and scientific work, supporting varied precision needs and result review.

MECHANICAL SYSTEMS DEVELOPMENT

Mechanical-development capabilities focused on performance, durability, reliability, maintainability, and safe recovery.

ENERGY, CHARGING & BATTERY SYSTEMS

Capabilities in charging, energy recovery, battery safety, hybrid energy, and operating-energy performance, configured to contract requirements.

HUMAN-AI-MACHINE SYSTEMS

Accountable human-AI-machine capabilities supporting safe operation, continuity, and recovery across business, industrial, transportation, infrastructure, aviation, and space contexts.

ENVIRONMENTAL & LIFECYCLE SYSTEMS

Environmental and lifecycle capabilities supporting responsible energy, materials, reparability, recovery, and end-of-life performance.

SOFTWARE OUTCOMES

A unified digital environment for daily work, technical files, communications, engineering tasks, devices, project coordination, operational information, controlled access, and system recovery. Available configurations are aligned with the applicable business, engineering, or client requirement.

COMPUTING OUTCOME

One scalable family spanning business, engineering, scientific, local-AI, and specialized workloads.



Aviation & Space Portfolio

TRIAD-HAR | TRIAD-TD | TRIAD-ED | AVIATION & SPACE | NAWAL PROJECT

NAWAL PROJECT

The Nawal Project is the aviation and space portfolio under TRIAD-ED and includes the Nawal-Naif Scientific and Applied Series.

NAWAL-NAIF SCIENTIFIC AND APPLIED SERIES

NAWAL-1 PLANETARY INTELLIGENCE

Aviation and space intelligence capabilities supporting operational awareness and decision support.

NAWAL-2 ED DYNAMIC MEMORY

Dynamic-system memory and continuity capabilities for changing operating conditions.

NAWAL-3 DFLK ROTOR SAFETY

Rotor-safety and continued-operation capabilities for multi-propulsion platforms.

NAWAL-4 SMART REGENERATION

Smart energy-recovery and regeneration capabilities for aviation and mobility applications.

NAWAL-5 COAXIAL PROPULSION

Civil-propulsion capabilities supporting performance, resilience, and adaptable aircraft configurations.

NAWAL-6 BATTERY THERMAL-SAFETY

Battery thermal-safety and energy-protection capabilities for aviation and high-demand platforms.

SELECTED AIRCRAFT MODELS

NAWAL-OMEGA-S | NAWAL-OMEGA-L | NAWAL-OMEGA 5-SEAT | NAWAL-OMEGA-SILENT

These models have been selected as aviation concepts. Their final designs remain in development and may be modified to match the customer's mission, aircraft class, safety objectives, and contract.

AVIATION SOFTWARE & CONTROL

Software capabilities for flight planning, operational visibility, control support, safety management, and client-specific aviation requirements.

AIRCRAFT HYBRIDIZATION

Application-dependent aircraft hybridization concepts targeting potential benefits of **approximately 30%** in selected configurations; outcomes depend on aircraft class and mission.

SPACECRAFT RECOVERY CAPABILITY

The portfolio includes spacecraft recovery capabilities for single-axis and coordinated three-axis operation. Results for both are presented in this profile.



Selected Results & Engagement

Selected outcomes across spacecraft recovery, control, and safety research.

~0.0025 s

SINGLE-AXIS RECOVERY RESULT

Single-axis spacecraft recovery program result.

~0.0025 s

THREE-AXIS RECOVERY RESULT

Coordinated three-axis spacecraft recovery program result.

17.0%

POINTING ACCURACY IMPROVEMENT

Recorded improvement in mean pointing accuracy.

14.7%

RECOVERY ACCURACY IMPROVEMENT

Recorded improvement in spacecraft recovery accuracy.

0% / 100%

SIGNAL SCREENING RESULT

False-event acceptance / genuine-event acceptance.

100% / 0%

BOUNDED STABILITY / SETTLING

Recorded outcomes under the separate result criteria.

SPACECRAFT RECOVERY RESULTS

Single-axis and coordinated three-axis recovery results are presented separately above. Products, configurations, and final designs remain subject to the applicable contract, design scope, and qualification requirements.

CONTRACT-LED DELIVERY

Products, designs, configurations, and deliverables are shaped by the scope of each contract and may be modified for the client's intended application. TRIAD-HAR welcomes technology partnerships, co-development, licensing, and complete client projects across technology, civil aviation, and space. The operating location and project footprint can follow the strongest contract, customer, and market opportunity.



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